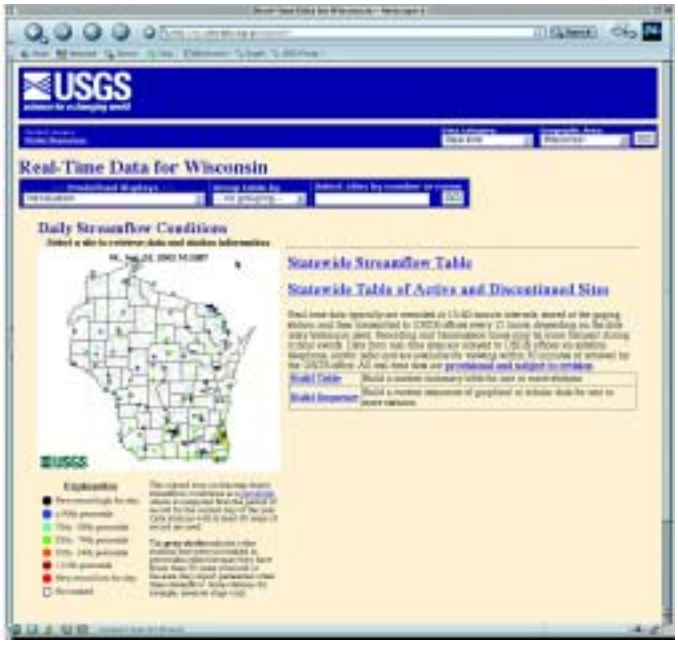
BASIC RECORDS AND MONITORING TEAM

Mission

Collect, store, compile, and disseminate water-resources data that address relevant issues and are responsive to the needs of customers and the general public. Provide relevant, credible, impartial, and timely data for understanding hydrologic systems, planning developments, designing facilities, forecasting floods, operating dams, wastewater treatment, and water-supply plants, managing lakes and wetlands, abating and preventing pollution, modeling, determining trends, and determining the occurrence and distribution of water and its quality. The real-time and historical data will be disseminated and made available to customers and the public in various forms and media including the Internet, direct computer access, computer disks and tape, and printed reports.



Team Members

Robert J. Waschbusch, Hydrologist
Herbert S. Garn, Hydrologist
William J. Rose, Hydrologist/Engineering
Daniel L. Olson, Hydrologic Technician
Bernard R. Ellefson, Hydrologic Technician
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Steven A. March, Hydrologic Technician
Thomas A. Wittwer, Hydrologic Technician
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Jeffrey J. Hanig, Hydrologic Technician
Paulette R. Homant, Hydrologic Technician
Brent W. Olson, Hydrologic Technician
Brett M. Esser, Hydrologic Technician
James M. Rauman, Hydrologic Technician

PROJECTS

COLLECTION OF BASIC RECORDS–SURFACE WATER

PROJECT CHIEF:

Robert J. Waschbusch

LOCATION:

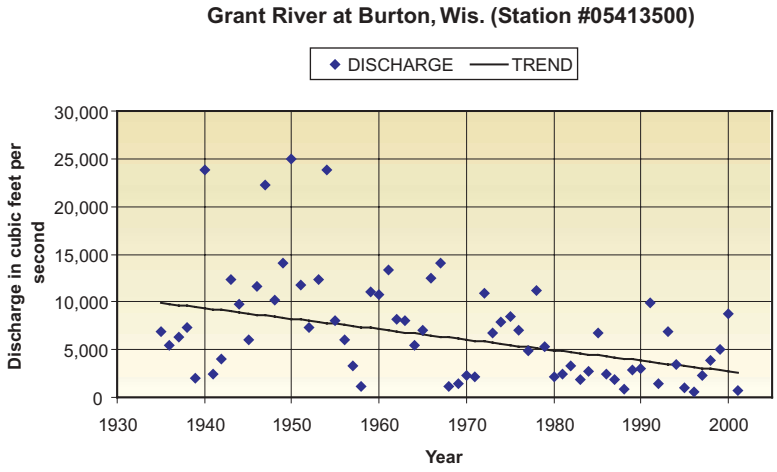
Statewide

PROJECT NUMBER:

WI 00100

PERIOD OF PROJECT:

July 1913–Continuing



Trend analysis showing decreasing trend in annual peak discharge, 1935–2001.

COOPERATORS

Bad River Band of Lake Superior Chippewa Indians
City of Barron
City of Beaver Dam
City of Fort Atkinson
City of Hillsboro
City of Peshtigo
City of Sparta
City of Thorp
City of Waupun
Dane County Department of Planning and Development
Dane County Regional Planning Commission
Federal Energy Regulatory Commission Licensees
- Black River Falls Municipal Utilities
- Dairyland Power Cooperative
- Northern States Power Company
- Stora Enso, Niagra Mill
- Wisconsin Electric Power Company
- Wisconsin Public Service Corporation
- Wisconsin Valley Improvement Company

Fontana/Walworth Water Pollution Control Commission
Green Bay Metropolitan Sewerage District
Illinois Department of Transportation
Kickapoo Valley Reserve
Lac du Flambeau Band of Lake Superior Chippewa
Madison Metropolitan Sewerage District
Menominee Indian Tribe of Wisconsin
Mole Lake Sokaogon Chippewa Community
Oneida Tribe of Indians of Wisconsin
Rock County Public Works Department
Southeastern Wisconsin Regional Planning Commission
- City of Racine
- Kenosha Water Utility
- Milwaukee Metropolitan Sewerage District
- Waukesha County

Stockbridge-Munsee Band of Mohican Indians
U.S. Army Corps of Engineers
Village of Wittenberg
Village of Westport
Walworth County Metropolitan Sewerage District
Wisconsin Department of Natural Resources
Wisconsin State Historical Society-Wade House Historic Site

PROBLEM

Surface-water information is needed for surveillance, planning, design, hazard warning, operation, and management in water-related fields such as water supply, hydroelectric power, flood control, irrigation, bridge and culvert design, wildlife management, pollution abatement, flood-plain management, and water-resources development. An appropriate database is necessary to provide this information.

OBJECTIVE

The objectives of this study are to provide continuous discharge records for selected rivers at specific sites to supply the needs for regulation, analytical studies, definition of statistical properties, trends analysis, determination of the occurrence, and distribution of water in streams for planning. The project is also designed to determine lake levels and to provide discharge for floods, low-flow conditions, and for water-quality investigations. Requests for streamflow data and information relating to streamflow in Wisconsin are answered. Basic data are published annually in the report "Water Resources Data–Wisconsin."

APPROACH

A network of streamflow stations and lake-level stations will be maintained throughout Wisconsin. This includes operating the equipment at the gaging station to record river or lake stage, making periodic discharge measurements at each streamflow station to establish or verify a stage-discharge rating curve, reducing the stage records to instantaneous and daily discharges, compilation of monthly and annual discharges, and preparing data for publication in the annual report "Water Resources Data–Wisconsin."

PROGRESS (July 2001 to June 2002)

During the current fiscal year, streamflow data were collected at a total of 121 sites and lake-level data were collected at six. These sites are listed in the following table, "Surface-Water Gaging Stations Expected to be Operated in 2003 FY." A map showing the location of all continuous-record streamflow-gaging stations in Wisconsin is shown on page 5.

Computation of streamflow and lake-level records for all the network stations for the 2001 water year was completed, stored in our NWIS computer database, and published in the annual report "Water Resources Data–Wisconsin, Water Year 2001."

PLANS (July 2002 to June 2003)

Data will be collected at 118 continuous-streamflow stations (see the following list) and lake levels at 6 stations. Streamflow records will be computed and data published for the 2002 water year. Requests for streamflow information will be answered.

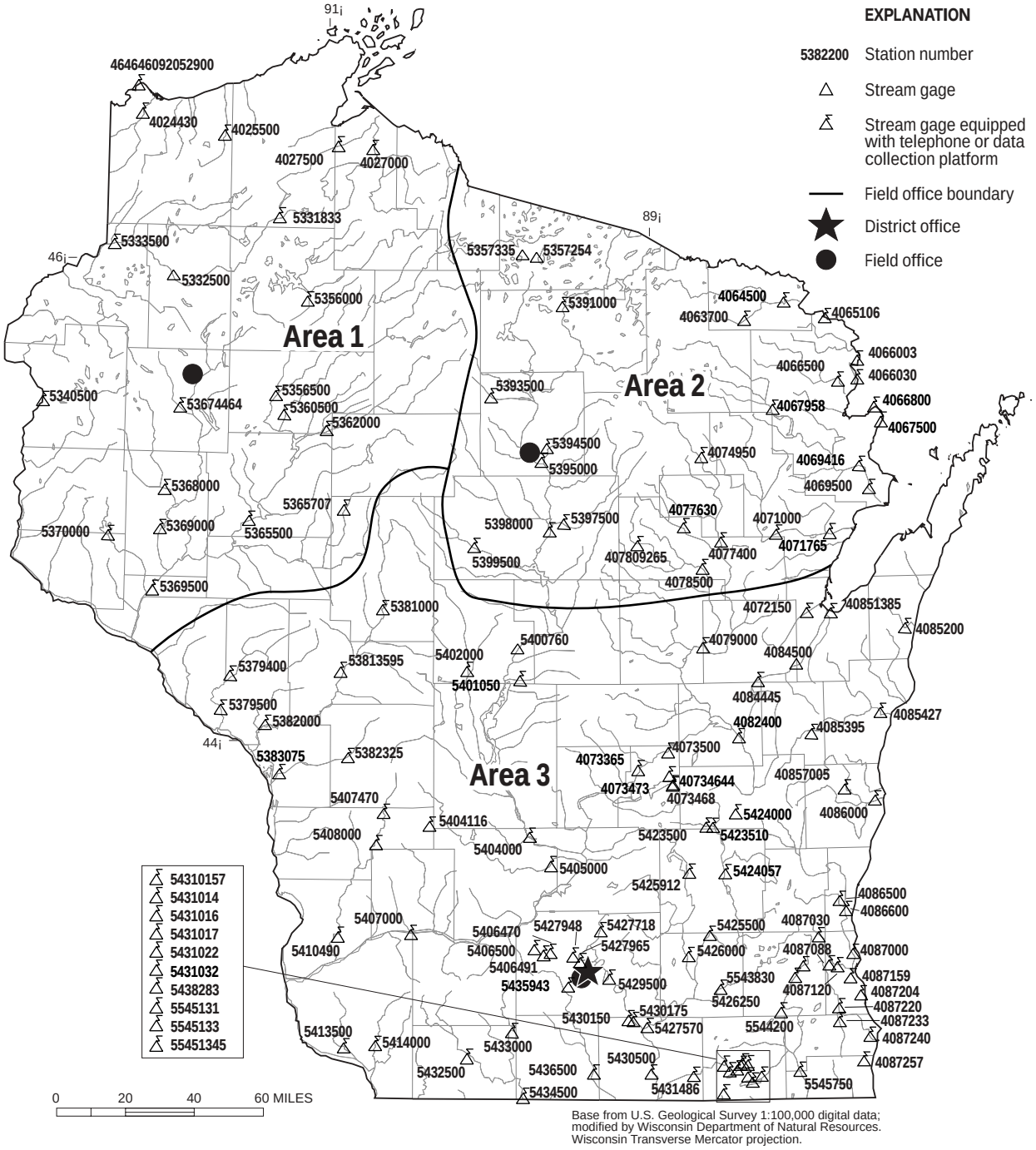
SURFACE-WATER GAGING STATIONS EXPECTED TO BE OPERATED IN 2003 FY

Station number	Name and location	Drainage Area	Period of record (water year)	Cooperator
464646092052900	Superior Bay, Duluth Ship Canal at Duluth, MN	4200	1994-	C of E, Detroit
04024430	Nemadji River - South Superior	420	1974-	WDNR
04025500	Bois Brule River - Brule	118	1943-81, 1984-	USGS Federal Program
04027000	Bad River - Odanah	597	1914-22, 1948-	Bad River Band of Lake Superior Chippewa Indians
04027500	White River - Ashland	301	1948-	NSP/WDNR
04029990	Montreal River - Saxon Falls	262	1987	NSP/WDNR
04063700	Popple River - Fence	139	1964-	USGS Federal Program
04064500	Pine River - Pine River Powerplant - Florence	533	1924-76, 1996-	WEPCO/WDNR
04065106	Menominee River - Niagara	2470	1993-	FERC
04066003	Menominee River - Pembine	3140	1950-	WEPCO/WDNR
04066030	Menominee River - White Rapids Dam - Banat, MI	3190	1999-	FERC
04066500	Pike River - Amberg	255	1914-70, 2000-	USGS Federal Program
04066800	Menominee River - Koss, MI	3700	1907-09, 1913-81, 1998-	FERC
04067500	Menominee River - McAllister	3930	1945-61, 1979-86 1988-90, 1993-95, 1998-	WDNR
04067958	Peshtigo River - Wabeno	447	1998-	WPS/WDNR
04069416	Peshtigo River - Porterfield	1020	1998-	FERC
04069500	Peshtigo River - Peshtigo	1080	1953-	City of Peshtigo
04071000	Oconto River - Gillett	705	1906-09, 1914-	USGS Federal Program
04071765	Oconto River - Oconto	966	1989-90, 1998-	WDNR
04072150	Duck Creek - Howard	108	1988-	Oneida Tribe of Indians of WI
04073365	Fox River - Princeton	962	2001-	USGS Federal Program
04073500	Fox River - Berlin	1340	1898-	C of E, Detroit
04074538	Swamp Creek - above Rice Lake at Mole Lake	46.3	1977-83, 1984-86, 2001-	Sokaogan Chippewa Community
04074548	Swamp Creek - below Rice Lake at Mole Lake	56.8	1977-79, 1982-85, 2001-	Sokaogan Chippewa Community
04074950	Wolf River - Langlade	463	1966-79, 1981-	Menominee Indian Tribe of WI
004077630	Red River - Morgan	114	1993	Stockbridge-Munsee Band of Mohican Indians
0407809265	Middle Branch Embarrass River - Wittenberg	76.3	1990-	Village of Wittenberg
04078500	Embarrass River - Embarrass	384	1919-85, 1994-	USGS Federal Program
04079000	Wolf River - New London	2260	1896-	C of E, Detroit
04082400	Fox River - Oshkosh	5310	1991	C of E, Detroit
04084445	Fox River - Appleton	5950	1986-	C of E, Detroit
04084500	Fox River - Rapide Croche Dam - Wrightstown	6010	1896-	LFRDA/WDNR
040851385	Fox River - Oil Tank Depot - Green Bay	6330	1989-	Green Bay MSD
04085200	Kewaunee River - Kewaunee	127	1964-96, 1998-	WDNR
04085395	S.Br. Manitowoc River - Hayton	109	1993-	WDNR
04085427	Manitowoc River - Manitowoc	526	1972-96, 1998-	WDNR
04085746	Mullet River - Greenbush	24.3	2001-	Wisconsin State Historical Soc.
04086000	Sheboygan River - Sheboygan	418	1916-24, 1951-	WDNR
04086500	Cedar Creek - Cedarburg	120	1930-70, 73-81, 1983-87, 1991-	WDNR
04086600	Milwaukee River - Pioneer Road - Cedarburg	607	1982-	SEWRPC
04087000	Milwaukee River - Milwaukee	696	1914-	SEWRPC
04087030	Menomonee River - Menomonee Falls	34.7	1975-77, 1979-	SEWRPC
04087088	Underwood Creek - Wauwatosa	18.2	1975-	SEWRPC
04087120	Menomonee River - Wauwatosa	123	1962-	SEWRPC
04087160	Kinnickinnic River - Milwaukee	20.4	1976-	SEWRPC
04087204	Oak Creek - South Milwaukee	25	1964-	SEWRPC
04087220	Root River - Franklin	49.2	1964-	SEWRPC
04087233	Root River Canal - Franklin	57	1964-	SEWRPC
04087240	Root River - Racine	190	1963-	SEWRPC
04087257	Pike River - Racine	38.5	1972-	SEWRPC
05332500	Namekagon River - Trego	488	1928-70, 1988	NSP/WDNR
05333500	St. Croix River - Danbury	1580	1914-81, 1984-	USGS Federal Program
05340500	St. Croix River - St. Croix Falls	6240	1902-	NSP/WDNR
05341500	Apple River - Somerset	579	1901-70, 1987	NSP/WDNR
05356000	Chippewa River - Winter	790	1912-	NSP/WDNR
05356500	Chippewa River - Bruce	1650	1914-	NSP/WDNR
05357254	Trout River - CTH H - Boulder Junction	58.9	1999-	Lac du Flambeau Band of Lake Superior Chippewa (LDF)
05357335	Bear River - Manitowish Waters	81.3	1991	LDF
05360500	Flambeau River - Bruce	1860	1951-	NSP/WDNR, FERC
05362000	Jump River - Sheldon	576	1915-	USGS Federal Program
05365500	Chippewa River - Chippewa Falls	5650	1888-1983, 1987	NSP/WDNR
05365707	North Fork Eau Claire River - Thorp	51	1986	City of Thorp
053674464	Yellow River - Barron	153	1991	City of Barron
05368000	Hay River - Wheeler	418	1951-	USGS Federal Program
05369000	Red Cedar River - Menomonie	1770	1907-08, 1913-	NSP/WDNR
05369500	Chippewa River - Durand	9010	1928-	C of E, St. Paul
05369900	Eau Galle River - Woodville	39.4	2001-	C of E, St. Paul
05370000	Eau Galle River - Spring Valley	64.1	1944-	C of E, St. Paul

SURFACE-WATER GAGING STATIONS EXPECTED TO BE OPERATED IN 2003 FY—Continued

Station number	Name and location	Drainage Area	Period of record (water year)	Cooperator
05379400	Trempealeau River - Arcadia	606	1960-77, 2001-	USGS Federal Program
05379500	Trempealeau River - Dodge	643	1914-19, 1934	C of E, St. Paul
05381000	Black River - Neillsville	749	1905-09, 1914-	USGS Federal Program
053813595	Black River - Black River Falls	1590	1985-	C of E, St. Paul, City of Black River Falls
05382000	Black River - Galesville	2080	1932-	C of E, St. Paul
05382325	La Crosse River - Sparta	167	1992-	City of Sparta
05383075	La Crosse River - LaCrosse	471	2000-	WDNR
05391000	Wisconsin River - Lake Tomahawk	757	1936-	WVIC/WDNR
05393500	Spirit River - Spirit Falls	81.6	1942-	WVIC/WDNR
05394500	Prairie River - Merrill	184	1914-31, 1939	WVIC/WDNR
05395000	Wisconsin River - Merrill	2760	1903-	WVIC/WDNR
05397500	Eau Claire River - Kelly	375	1914-27, 1939-	WVIC/WDNR
05398000	Wisconsin River - Rothschild	4020	1945-	WVIC/WDNR
05399500	Big Eau Pleine River - Stratford	224	1914-26, 1937-	WVIC/WDNR
05400760	Wisconsin River - Wisconsin Rapids	5420	1914-50, 1958-	WVIC/WDNR
05401050	Tenmile Creek - Nekoosa	73.3	1963-79, 1988-94, 1998-	WDNR
05402000	Yellow River - Babcock	215	1944-	WVIC/WDNR
05404000	Wisconsin River - Wisconsin Dells	8090	1935-	WVIC/WDNR
05404116	S. Br. Baraboo River - Hillsboro	39.1	1988-	City of Hillsboro
05405000	Baraboo River - Baraboo	609	1914-22, 1943-	USGS Federal Program
05406500	Black Earth Creek - Black Earth	45.6	1954-	DCRPC
05407000	Wisconsin River - Muscoda	10400	1903-04, 1914-	C of E, St. Paul
054070396	Fennimore Fork near Castle Rock	21.7	2001-	WDNR
05407470	Kickapoo River - Ontario	151	2001-	USGS Federal Program
05408000	Kickapoo River - LaFarge	266	1939-	Kickapoo Reserve
05410490	Kickapoo River - Steuben	687	1933-	C of E, St. Paul
05413500	Grant River - Burton	269	1935-	C of E, R. Island
05414000	Platte River - Rockville	142	1935-	C of E, R. Island
05423500	S. Br. Rock River - Waupun	63.6	1948-69, 1987	City of Waupun
05425500	Rock River - Watertown	969	1931-70, 1977-	C of E, R. Island, Rock County PWD
05425912	Beaverdam River - Beaver Dam	157	1984-	City of Beaver Dam
05426000	Crawfish River - Milford	762	1931-	Rock County PWD, Jefferson County
05426250	Bark River - Rome	122	1980-	SEWRPC
05427570	Rock River - Indianford	2630	1975-	Rock County PWD
05427850	Yahara River at Hwy. 113 at Madison	114	2002-	WDNR, Town of Westport, DCRPC
05429500	Yahara River - McFarland	327	1930-	DCDP&D
05430150	Badfish Creek - Cooksville	82.6	1977-	MMSD
05430175	Yahara River - Fulton	517	1977	MMSD
05430500	Rock River - Afton	3340	1914-	C of E, R. Island
05431032	Turtle Creek - Delavan	83.3	1996-	WALCOMET
05431486	Turtle Creek - Clinton	199	1939-	C of E, Rock Island, WALCOMET
05432500	Pecatonica River - Darlington	273	1939-	C of E, R. Island
05433000	E. Br. Pecatonica River - Blanchardville	221	1939-1986, 1988	C of E, R. Island
05434500	Pecatonica River - Martintown	1034	1940-	C of E, R. Island
05435943	Badger Mill Creek - Verona	20.3	1997-	MMSD
05436500	Sugar River - Brodhead	523	1914-	C of E, Rock Island
05438283	Piscasaw Creek - Walworth	9.58	1992-	Fontana/Walworth WPCC
05543830	Fox River - Waukesha	126	1963-	SEWRPC
05544200	Mukwonago River - Mukwonago	74.1	1973-	SEWRPC
05545750	Fox River - New Munster	811	1940-	IL. DOT
LAKES				
04082500	Lake Winnebago - Oshkosh	5880	1882-	C of E, Detroit
04084255	Lake Winnebago - Stockbridge	5880	1983-	C of E, Detroit
05404500	Devil's Lake - Baraboo	4.79	1922-30, 1932, 1934-81, 1985-	WDNR
05427235	Lake Koshkonong - Newville	2560	1987	Rock County PWD
05428000	Lake Mendota - Madison	233	1903, 1916-	DCDPW
05429000	Lake Monona - Madison	279	1915-	DCDPW

C of E, Detroit – Corps of Engineers, Detroit, Michigan
C of E, R. Island – Corps of Engineers, Rock Island, Illinois
C of E, St. Paul – Corps of Engineers, St. Paul, Minnesota
DCDP&D – Dane County Department of Planning and Development
DCRPC – Dane County Regional Planning Commission
FERC – Federal Energy Regulatory Commission Licensees
Fontana/Walworth WPCC – Fontana/Walworth Water Pollution Control Commission
Green Bay MSD – Green Bay Metropolitan Sewerage District
IL. DOT – Illinois Department of Transportation
LFRDA – Lower Fox River Dischargers' Association
MMSD – Madison Metropolitan Sewerage District
NSP – Northern States Power Company
Rock County PWD – Rock County Public Works Department
SEWRPC – Southeastern Wisconsin Regional Planning Commission
WALCOMET – Walworth County Metropolitan Sewerage District
WDNR – Wisconsin Department of Natural Resources
WEPCO – Wisconsin Electric Power Company
WPS – Wisconsin Public Service
WVIC – Wisconsin Valley Improvement Company



Location of continuous-record data-collection stations.

COLLECTION OF BASIC RECORDS–GROUND WATER

COOPERATOR:

Wisconsin Geological and Natural History Survey

PROJECT CHIEF:

Bernard R. Ellefson

LOCATION:

Statewide

PROJECT NUMBER:

WI 00200

PERIOD OF PROJECT:

July 1946–Continuing

PROBLEM

Ground-water data are needed to determine short-term changes and long-term trends in ground-water levels in the State. It is important to know if these changes are natural or man-induced and how these changes are affecting storage in the ground-water reservoirs.

OBJECTIVE

Maintain records of ground-water level fluctuations from network of observation wells representative of Wisconsin's principal aquifers.

APPROACH

A basic network of about 125 wells is being maintained. The network will be constantly modified and improved to provide the best possible coverage of our ground-water resource. A subnetwork of key wells are included in this network. Key wells have long periods of record and are measured weekly or are equipped with continuous recorders.

PROGRESS (July 2001 to June 2002)

Routine data collection and data being collected by observers is evaluated and entered into the database. Installed equipment to collect realtime data at three sites. Water-level data for the annual report, "Water Resources Data–Wisconsin, Water Year 2001" was completed. Water level data for all observation wells was made available on the Internet at http://wi.water.usgs.gov.

PLANS (July 2002 to June 2003)

Plans include: (1) continue measurements on the observation-well network, (2) replace and hire new observers and make quality-assurance checks when possible, and (3) data evaluation and preparation for the annual report.

REPORTS

Patterson, G.L., and Zaporozec, A., 1988, Analysis of water-level fluctuations in Wisconsin wells: Wisconsin Geo-

logical and Natural History Survey Information Circular 63, 38 p.

Erickson, R.M., and Cotter, R.D., 1983, Trends in ground-water levels in Wisconsin through 1981: Wisconsin Geological and Natural History Survey Information Circular No. 43, 139 p.

Erickson, R.M., 1972, Trends in ground-water levels in Wisconsin, 1967–71: Wisconsin Geological and Natural History Survey Information Circular No. 21, 40 p.

Devaul, R.W., 1967, Trends in ground-water levels in Wisconsin through 1966: Wisconsin Geological and Natural History Survey Information Circular No. 9, 109 p.

COLLECTION OF BASIC RECORDS– DANE COUNTY PROGRAM

COOPERATOR:

Dane County Regional Planning Commission

PROJECT CHIEF:

Herbert S. Garn

LOCATION:

Dane County

PROJECT NUMBER:

WI 00302

PERIOD OF PROJECT:

Continuing

PROBLEM

A long-term base of water-quality data is needed for water-resource planning and assessment of water quality in the lakes and streams of Dane County.

OBJECTIVE

The objectives of this program are to determine suspended-sediment and phosphorus loads of selected tributaries to Lake Mendota and to collect data to identify long-term changes in base-flow water quality in selected streams in Dane County.

APPROACH

Streamflow-monitoring stations with automatic water-quality samplers are operated on three tributaries to Lake Mendota. Samples for analysis of suspended-sediment and phosphorus concentrations are collected at low flow and during periods when surface runoff is entering the streams. The concentration and streamflow data are used to compute annual suspended-sediment and total-phosphorus loads for the stations. Various water-quality constituents are measured six times during the year at base flow of selected streams in the county.

PROGRESS (July 2001 to June 2002)

Streamflow and water-quality data collection at three continuous-record monitoring sites (Pheasant Branch at Middleton, Spring Harbor Storm Sewer at Madison, and Yahara River at Windsor) continued; a new station on Yahara River at SH 113 at Madison was installed in 2001. Suspended sediment loads were computed for Spring Harbor Storm Sewer; suspended sediment and total phosphorus loads were computed for Yahara River at Windsor and Pheasant Branch for the 2001 water year. Continuous streamflow monitoring at Black Earth Creek near Black Earth was continued for the year.

Base-flow water-quality sampling was completed for Pheasant Branch at Hwy. 12 in Middleton, Token Creek near Madison, East Branch and West Branch Starkweather Creek at Madison in November 2001. Base-flow sampling will begin at a new set of four

streams in the County for 2002. All streamflow, load, and concentration data were published in the annual data report "Water Resources Data–Wisconsin, Water Year 2001."

PLANS (July 2002 to June 2003)

Streamflow monitoring will be continued at Black Earth Creek; streamflow and water quality monitoring will be continued at the four continuous-record stations on tributaries to lake Mendota. Six base-flow water quality samples will be collected from Black Earth Creek near Cross Plains, Yahara River at Windsor, Maunesha River near Sun Prairie, and Nine Springs Creek near Madison during the calendar year (starting in spring 2002). Final data will be prepared and published in the annual data report, "Water Resources Data–Wisconsin."

WATER-QUALITY MONITORING OF FOX RIVER AND TRIBUTARIES, GREEN LAKE COUNTY

COOPERATOR:

Green Lake County Department of Land Conservation

PROJECT CHIEF:

Herbert S. Garn

LOCATION:

Northern Green Lake County

PROJECT NUMBER:

WI 00304

PERIOD OF PROJECT:

October 2001 to September 2003

PROBLEM

Few water-quality data exist for the upper Fox River in Green Lake County to assess present water-quality conditions, identify problems, and develop management plans.

OBJECTIVE

The objective of this project is to: (1) determine the current water quality (nutrient and sediment characteristics) of the Fox River and selected main tributaries, (2) assess the spatial variation of water quality conditions of the streams, and (3) build on the quantitative database of water quality for Green Lake County.

APPROACH

The water quality of the Fox River will be monitored at three sites: at the inlet to Lake Puckaway, at Princeton, and at Berlin. Four additional secondary sampling sites will be located on principal tributaries near their confluences with the Fox River; these tributaries are the Mecan, White, and Puchyan Rivers and Sucker Creek. Fox River sites will be sampled six times per year and tributary sites will be sampled two times per year (once during summer low flow and once at high flow) for physical characteristics, nutrient and sediment concentrations, and bacteria. Streamflow and field water quality characteristics will be measured at each site each sampling visit. Continuous-record streamflow gaging stations on the Fox River at Princeton and at Berlin will provide information to evaluate current flow conditions relative to the long-term flow record.

PROGRESS (July 2001 to June 2002)

Fox River sites have been sampled four times and tributary sites once for the year.

PLANS (July 2002 to June 2003)

Monitoring of the sites will continue through the 2002 water year. All data will be published in the annual data report “Water Resources Data–Wisconsin, Water Year 2002.”

COLLECTION OF BASIC RECORDS–SEDIMENT

COOPERATORS:

U.S. Army Corps of Engineers

PROJECT CHIEF:

William J. Rose

LOCATION:

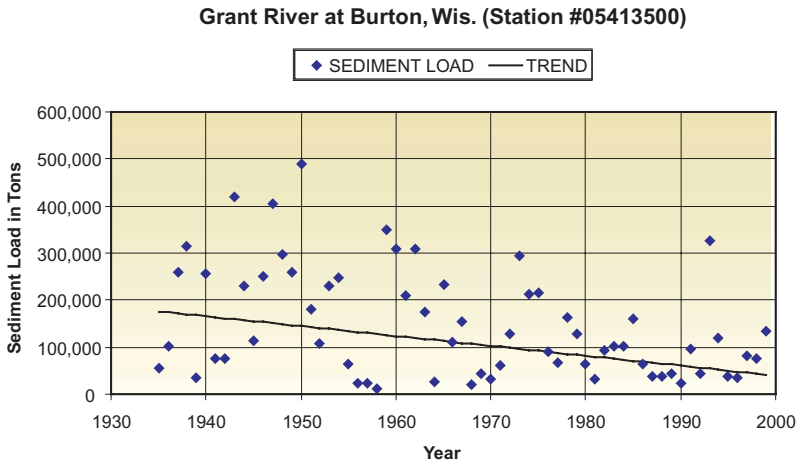
Statewide

PROJECT NUMBER:

WI 00400

PERIOD OF PROJECT:

March 1968–Continuing



Trend analysis showing decreasing trend in annual sediment load, 1935–2001.

PROBLEM

Water-resources planning and water-quality assessment require a knowledge of the quantity and quality of sediment being transported in rivers and streams in Wisconsin.

OBJECTIVE

This project will provide sediment data for use in specific planning and action programs and will develop a database for determining trends in sediment discharge and yield. Streams will be characterized according to range of concentration and particle size of suspended sediment.

APPROACH

Sediment-monitoring stations will be operated at selected stream sites throughout the State, including sites of specific interest to cooperating agencies.

The extent of monitoring at a given site will depend on the characteristics of the basin and the needs of the cooperating agency. Some sites will be sampled manually at infrequent intervals; other sites, where flow responds rapidly to precipitation, will be sampled by automatic samplers.

At sites where bedload or unmeasured sediment discharge may be a significant part of the total sediment discharge, suspended- and bed-sediment particle size will be determined from samples collected concurrently with hydraulic data. These data will be used to estimate total sediment discharge using one of several techniques such as the modified Einstein procedure.

PROGRESS (July 2001 to June 2002)

Sediment data have been collected at more than 200 stream sites in Wisconsin since 1968. All data have been published annually in the data report, “Water Resources Data–Wisconsin.” The 2001 program consisted of monitoring to determine daily suspended sediment loads for Grant River at Burton. Suspended-sediment monitoring at this site has been continuous since 1978.

PLANS (July 2001 to June 2002)

U.S. Army Corps of Engineers—Operation of the Grant River monitoring station will continue.

Efforts to secure cooperative funding to establish a long-term sediment-monitoring network will continue. About 10 sites areally distributed to sample runoff from the major geographic provinces would provide an adequate network.

REPORTS

Rose, W.J., and Graczyk, D.J., 1996, Sediment transport, particle size, and loads in North Fish Creek in Bayfield County, Wisconsin, water years 1990–91: U.S. Geological Survey Water-Resources Investigations Report 95–4222, 18 p.

Rose, W.J., 1992, Sediment transport, particle sizes, and loads in the lower reaches of the Chippewa, Black, and Wisconsin Rivers in western Wisconsin: U.S. Geological Survey Water-Resources Investigations Report 90–4124, 38 p.

WISCONSIN WATER-USE DATA FILE

COOPERATOR:

Wisconsin Department of Natural Resources

PROJECT CHIEF:

Bernard R. Ellefson

LOCATION:

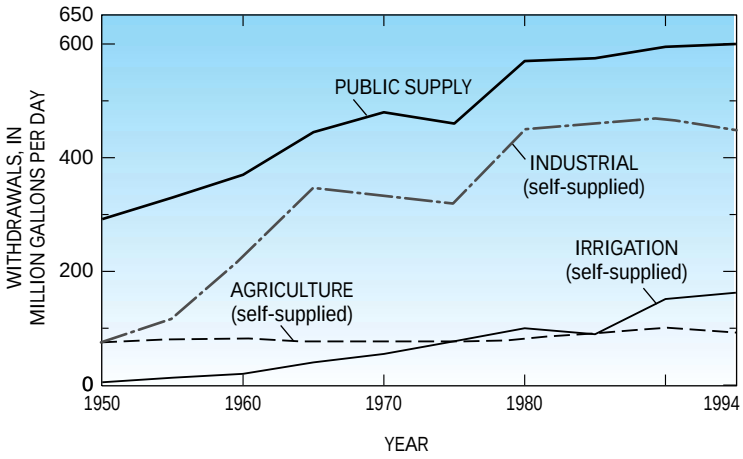
Statewide

PROJECT NUMBER:

WI 00700

PERIOD OF PROJECT:

March 1978–Continuing



PROBLEM

The need for reliable water-use data by State and Federal planning agencies is increasing as the competition for use of the State's water resources increases. Water-use data in a standardized format needs to be available to assist in making decisions on future water use.

OBJECTIVE

The purpose of this project is to collect accurate and complete data on Wisconsin's water use, to store data, and to prepare periodic reports on water use in the State.

APPROACH

Sources of water-use information will be evaluated. The best available data will be entered into a database. Efforts will be made to upgrade the accuracy of the water-use data.

PROGRESS (July 2001 to June 2002)

The database was updated with current water-use data. These data included high capacity well data, public-supply information, and data used to estimate irrigation water use. These and other data were used to make water-use estimates for the 2000 water use summary.

PLANS (July 2002 to June 2003)

Plans include: (1) continue to update and maintain the database with current water-use data, (2) supply water-use data for water-resources studies currently being conducted in the State, and (3) publish an atlas-type report, "Water Use in Wisconsin, 2000."

REPORTS

Ellefson, B.R., Fan, C.H., and Ripley, J.L., 1995, Water use in Wisconsin, 1995: U.S. Geological Survey Open-File Report 97–356, 1 sheet, scale 1:5,000,000.

Ellefson, B.R., Sabin, T.J., and Krohelski, J.T., 1993, Water use in Wisconsin, 1990: U.S. Geological Survey Open-File Report 93–118, 1 sheet, scale 1:5,000,000.

Ellefson, B.R., Rury, K.S., and Krohelski, J.T., 1988, Water-use in Wisconsin, 1985: U.S. Geological Survey Open-File Report 87–699, 1 sheet, scale 1:5,000,000.

U.S. Geological Survey, 1990, National Water Summary, 1987– Hydrologic events and water supply and use: U.S. Geological Survey Water-Supply Paper 2350, 553 p.

Krohelski, J.T., Ellefson, B.R., and Storlie, C.A., 1987, Estimated use of ground water for irrigation in Wisconsin, 1984: U.S. Geological Survey Water- Resources Investigations Report 86–4079, 12 p., 1 pl.

Lawrence, C.L., and Ellefson, B.R., 1984, Public-supply pumpage in Wisconsin, by aquifer: U.S. Geological Survey Open-File Report 83–931, 40 p.

____1982, Water use in Wisconsin, 1979: U.S. Geological Survey Open-File Report 82–444, 98 p.

MENOMINEE TRACE-ELEMENT MONITORING

COOPERATOR:

Menominee Indian Tribe of Wisconsin

PROJECT CHIEF:

Herbert S. Garn

LOCATION:

Menominee Indian Reservation

PROJECT NUMBER:

WI 12301

PERIOD OF PROJECT:

March 1996 to September 2001

PROBLEM

Maintaining the quality and pristine nature of the Wolf River and its tributaries is extremely important to the Menominee Indian Tribe of Wisconsin (MITW) in the Upper Wolf River Basin. Information is needed to describe the current status of water quality and biotic conditions within the Reservation, and to determine the presence or absence of contaminants in major streams. Several years of data are available from a recently-completed study at a limited number of USGS sites (three) on the Wolf River near the Reservation boundaries for discharge, major ions and nutrients (1986–98), trace metals (1995–98), organics, and aquatic communities. Samplings were conducted for concentrations in water and for trace metals in water, fish livers, aquatic invertebrates, and streambed sediment. No similar comparative data exist for the major streams tributary to the Wolf River or other headwater streams originating and flowing out of the Reservation. A historical database for other streams within the Menominee Indian Reservation is needed to evaluate present conditions and provide a baseline from which changes in conditions may be determined.

OBJECTIVE

The primary objective of the monitoring is to establish data at a network of stations throughout the Reservation that will be useful for characterizing existing water-quality conditions, developing water-quality and watershed-management plans, and helping conserve and protect ambient conditions and ecosystems of the Reservation. Specific objectives are to: (1) determine physical properties and concentrations of chemical constituents in water-column samples of all major streams on the Reservation, and (2) quantify and characterize benthic invertebrate communities at the selected sample sites as an additional indicator of water-quality and environmental conditions.

APPROACH

Water sampling will be conducted to determine physical properties, major ion, and nutrient concentrations at two USGS sampling sites on the Wolf River plus 10 new sites on major tributaries to the Wolf River and other streams entering or leaving the reservation. Water-sampling frequency at each of the sites will be

roughly quarterly beginning in October 2000 plus one synoptic sample during high-flow conditions, to yield five samples per site. Pesticide samples will be collected at three sites each sampling time. Sampling will be conducted using standard protocols of the USGS National Water Quality Assessment (NAWQA) program. Streamflow data will be collected at the USGS gaging station at Langlade.

Biological sampling for benthic macro invertebrates will be done at all sites using a fixed-effort qualitative sampling of all available habitats ("multi-habitat") to provide a single composite sample. Biological sampling will be conducted once in the fall 2000 at low flow. All sample analyses will be performed by the USGS National Water Quality Laboratory.

PROGRESS (July 2001 to June 2002)

Water and benthic macroinvertebrate sampling were completed for the year. The streamflow gaging station at Langlade was operated for the year. Water-quality data and discharge data were published in the report, "Water Resources Data–Wisconsin, Water Year 2001." A summary of the benthic macroinvertebrate data was submitted to the tribe.

PLANS (July 2002 to June 2003)

Project completed.

REPORTS

Garn, H.S., Scudder, B.C., Richards, K.D., and Sullivan, D.J., Characteristics of water, sediment, and benthic communities of the Wolf River, Menominee Indian Reservation, Wisconsin, 1986–98: U.S. Geological Survey Water-Resources Investigations Report 01–4019, 54 p.